



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/562,750

02/03/2009

Martin Collins

39290

7834

116 7590 09/28/2011
PEARNE & GORDON LLP
1801 EAST 9TH STREET
SUITE 1200
CLEVELAND, OH 44114-3108

EXAMINER

ROGERS, LAKIYA G

ART UNIT

PAPER NUMBER

3744

MAIL DATE

DELIVERY MODE

09/28/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/562,750	COLLINS ET AL.	
	Examiner	Art Unit	
	LAKIYA ROGERS	3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/29/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 32-47 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 32-47 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☒ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 29 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO 943) | Paper No(s)/Mail Date: ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/29/2005</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

This Office Action is in response to the preliminary amendment submitted on 12/29/2005. Claims 1-31 have been cancelled and claims 32-47 remain pending for examination.

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 12/29/2005 was filed after the filing date of the application. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because of the inclusion of the legal phraseology "said" and undue length (more than 150 words). Correction is required. See MPEP § 608.01(b).

Art Unit: 3744

4. The disclosure is objected to because of the following informalities: On page 12, paragraph 3, line 1 replace the number “30” after the phrase “return ducting part” with --25-- for in keeping with the drawings for clarity.

Appropriate correction is required.

Drawings

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **compressor** claimed in **claim 32** must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

6. **Claims 32-47** are objected to because of the following informalities:

Specifically, **claims 40-42** depend from cancelled claims. For the purpose of this examination, it is presumed that **claims 33-37, 39, 40 and 42** should depend from **claim 32** and **claim 41** should depend from **claim 40**.

Regarding claim 38, lines 2-3 recite "...said refrigerator compartment...". However, there is a lack of antecedent basis for this limitation. For the purpose of this examination, it is presumed that "...said refrigerator compartment..." should be replaced with --the at least one cabinet compartment--.

Regarding claim 43, insert the word --the-- in line 5 following the word "with" for clarity.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. **Claims 32, 33 and 35-39** are rejected under 35 U.S.C. 102(e) as being anticipated by Sung (US2004/0168458).

Regarding claim 32, Sung teaches a refrigerated air supply system for a refrigerator cabinet (see Fig. 1) having at least one cabinet compartment (including storage compartment 16

Art Unit: 3744

and pan compartment 14) at least partially defined by inner walls (see Fig. 2), an insulation layer at least partly enclosing the cabinet compartment (see 0017), the cabinet compartment having a compartment opening (at least above pans (P); see Figs. 3 and 6) facing substantially upwards which compartment opening connects the connects the cabinet compartment with the space surrounding the cabinet (when the lid is open), the cabinet also comprising a door (at least at pans (P); see Figs. 3 and 6) which in one position covers the compartment opening and substantially closes the cabinet compartment (during normal operation of the door), the cabinet also comprising a machine compartment (lower portion of chamber 18 housing condenser 38 and compressor 36; see Fig. 3 and 6) for storing at least one compressor (36), at least one of the inner walls having a substantially horizontal shelf plane (at wall 37; see Fig. 2), at least one of those planes being positioned vertically above the machine compartment (see Fig. 3) characterized in that the refrigerated air supply system is positioned inside at least one of the compartments (see Fig. 2), the system comprising at least one evaporator (34), at least one return ducting part (top portion of refrigeration chamber 18 above wall 37; see Fig. 2) and at least one fan (31), that the refrigerated air supply system comprises at least one air supply outlet (at end of air guide 61 where air enters cabinet compartment; see Fig. 2) which provides an airflow into at least one of the cabinet compartments (indicated by arrows in Figs. 2 and 5) and at least one air supply inlet (at intake hole 33; see Figs. 2 and 3) which brings an airflow out from at least one of the cabinet compartments.

Regarding claim 33, Sung teaches the invention as recited above and further teaches that the evaporator (34) is positioned between the return ducting part (formed by upper section of compartment 18) and the inner wall (see Fig. 2).

Art Unit: 3744

Regarding claim 35, Sung teaches the invention as recited above and further teaches that the air supply outlet (at end of air guide 61 where air enters cabinet compartment; see Fig. 2) and the air supply inlet (at intake hole 33) is formed at the return ducting part (top portion of refrigeration chamber 18 above wall 37; see Fig. 2).

Regarding claim 36, Sung teaches the invention as recited above and further teaches that the distance (separation) between the lowest end of the return ducting part and the lowest part of the cabinet compartment forms the air supply inlet (byway of intake hole 33 in separation wall) the air supply inlet bringing an airflow out from the lowest end of the cabinet compartment.

For clarity, it is understood that the wall having intake hole (33) is considered the separation between the lowest end of the return ducting part and the lowest part of the cabinet compartment as shown in Figs. 2 and 6. Therefore, the wall forms the air supply inlet by having intake hole (33) and brings an airflow out from the lowest end of the cabinet compartment meeting the limitation of the claim as currently presented.

Regarding claim 37, Sung teaches the invention as recited above and further teaches that the return ducting part (formed by upper section of compartment 18) cooperates with at least one of the inner walls (at least at wall assembly 24) capable of enclosing a refrigerator compartment inside which the evaporator is positioned (see Fig. 2).

Regarding claim 38, Sung teaches the invention as recited in the rejection of claim 37 above and further teaches the at least one cabinet compartment (including storage compartment 16 and pan compartment 14) extends between the air supply outlet and the air supply inlet (at intake hole 33) creating a connection for an airflow between the air supply outlet, the air supply inlet, and the evaporator (as indicated by airflow arrows; see Fig. 2).

Art Unit: 3744

Regarding claim 39, Sung teaches the invention as recited above and further teaches in Fig. 2 that the return ducting part is at least partly positioned vertically above the shelf plane (at wall 37).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. **Claim 34** is rejected under 35 U.S.C. 103(a) as being unpatentable over Sung (US2004/0168458).

Regarding claim 34, Sung teaches the invention as recited above but fails to explicitly teach the fan is positioned substantially vertically above the evaporator.

However, it is a well known technique in the refrigeration art at the time of invention to position a fan above the evaporator in order to assist in drawing air to be conditioned over the evaporator while maximizing space available in a compartment for housing goods to be cooled

Art Unit: 3744

as evidenced by Marques et al. (US2007/0137242; see Fig. 1). Furthermore, a person of ordinary skill in the art at the time of invention would recognize that modifying the system of Sung to have the fan positioned substantially above the evaporator would be a rearrangement of parts and involves only routine skill in the art.

12. **Claims 40 and 41** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sung (US2004/0168458) further in view of Clarke et al. (US 6164085)

Regarding claim 40, Sung teaches the invention as recited above but fails to teach the floor ducting part arrangement recited in the claims.

However, Clarke teaches a cooled cabinet having an air supply system including a floor ducting part providing ducts extending along the lowest substantially horizontal part of the cabinet compartment (see at least Fig. 8b), the floor ducting part in each end having at least one floor duct opening (plenums 50 and central air duct) providing a connection for an airflow from the cabinet compartment (interior 26), through the ducts and to the air supply inlets (at least at opening at top of side walls 40 and apertures 88). Clarke teaches that this arrangement significantly reduces temperature variation and helps to maintain a uniform temperature profile throughout the container (see Col. 3, lines 28-44).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to modify the system of Sung to include a floor ducting part providing ducts extending along the lowest substantially horizontal part of the cabinet compartment, the floor ducting part in each end having at least one floor duct opening providing a connection for an airflow from the cabinet compartment through the ducts and to the air supply inlets in order to

Art Unit: 3744

significantly reduce temperature variations and help to maintain a uniform temperature profile throughout the cabinet compartment in view of the teaching by Clarke.

Regarding claim 41, Sung teaches the invention as modified above and Clarke further teaches that the floor ducting part is detachably positioned inside the cabinet compartment.

Although not explicitly taught, Clarke teaches that alternative arrangements for the floor ducting system (see at least Figs. 8A and 8B) implicitly teaching that the floor ducting part is detachably positioned inside the cabinet. Furthermore, a person of ordinary skill in the art at the time of invention would recognize that all elements in the cabinet system are "detachably positioned" provided the proper tooling and force.

13. **Claims 42-44** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sung (US2004/0168458) further in view of Lee (US 5996370).

Regarding claim 42, Sung teaches the invention as recited above and further teaches a ducting part (at air shower device 30; see Fig. 5) with at least one inlet (at first duct panel 80; indicated by airflow arrow in Fig. 5) and at least one outlet (at holes 82 and 92), at least one ducting space (space including first duct panel 80 and second duct panel 90) creating a connection for an airflow between the at least one inlets and the at least one outlet.

Sung fails to explicitly teach that the ducting part is a door ducting part.

However, Lee teaches the technique of providing a duct arrangement in the door of a refrigerator cabinet (see at least Fig. 3). Lee further teaches that this arrangement gives consideration to the introduction of hot air from opening and closing of the door resulting in a more uniform inner temperature in the refrigerator compartment (see Col. 1, lines 20-30).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to modify the system of Sung in order to have the duct arrangement on door in order to have a more uniform inner temperature considering the hot air introduced by the opening of the door in view of the teachings by Lee. Furthermore, a person of ordinary skill in the art at the time of invention would be able to modify the system of Sung, *mutatis mutandis*, or making the necessary changes.

Regarding claim 43, Sung teaches the invention as modified above and Sung further teaches that the return ducting part comprises an air flow directing part (guide pad 61) forming the air supply outlets (see Figs. 2, 4, and 5), the airflow directing part having means (air flow paths formed by guides 69; see Fig. 4) to cooperate with the at least one door inlet being positioned at the door when the door is closed so that air is brought from the air supply outlets to the door inlets (during normal operation as modified above).

Regarding claim 44, Sung teaches the invention as modified above and Sung further teaches that the door ducting part (as modified) comprises a separating means (partition 70) dividing the airflow inside the door ducting space so that it flows towards at least two separate door outlets (at louver holes 82 and 92 as modified).

14. **Claim 45** is rejected under 35 U.S.C. 103(a) as being unpatentable over Sung (US2004/0168458) and Lee (US 5996370) further in view of Park (US5664437).

Regarding claim 45, Sung teaches the invention as modified above and Sung further teaches that the door ducting part comprises two distinctive rows of door outlets (at holes 82 and 92; see Fig. 5).

Art Unit: 3744

Sung as modified fails to explicitly teach that the area of the outlets of each row respectively being larger in one end of the door ducting part than in its other end.

However, Park teaches that cool air in the lower portion of the cool air passage had a warmer temperature than the cool air in the upper portion of the cool air passage because of heat exchange taking place with the surrounding air. Park further teaches that the lower portion of the cooled compartment will need more cool air than the upper portion in order to eliminate the difference in temperature (see paragraph 7, lines 24-38).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to further modify the system of Sung by gradually increasing the size of the openings from the point of discharge in order to promote uniform cooling temperatures within the cabinet in a simplified manner in view of the teaching by Park.

15. **Claims 46 and 47** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sung (US2004/0168458) and Lee (US 5996370) further in view of Kim et al. (US6543249).

Regarding claim 46, Sung teaches the invention as modified above but fails to explicitly teach that the door is provided with at least one holder for an ice tube container.

However, Kim teaches the technique of providing an ice making assembly (at 22) in the path of the airflow cooling a compartment (see Fig. 3) having a holder (compartment defined by panel 30; see Fig. 3) for an ice tube container (ice mold). The technique of placing an ice making assembly in a cooled air flow path of a conditioned cabinet has been made part of the ordinary capabilities of one skilled in the art based upon at least the teachings of Kim.

It would have been obvious to a person of ordinary skill in the art at the time of invention to further modify the system of Sung to include the door provided with at least one holder for an

Art Unit: 3744

ice tube container since a person of ordinary skill in the art at the time of invention would have been capable of applying the technique of placing an ice making assembly in the cooled air flow path of a cooled cabinet in view of the teachings by Kim and such modification would have yielded predictable results.

Regarding claim 47, Sung teaches the invention as modified above and Kim further teaches that the container is provided with several projections forming pockets (ice making cavities of mold) within the container (see Fig. 3).

Sung as modified fails to teach the container is provided with a removable cover.

However, it is a well known technique in the ice making art to provide a cover for an ice mold as evidenced by Lennep (US2503693). Furthermore, a person of ordinary skill in the art at the time of invention would recognize that providing a cover for the ice mold would keep out contaminants that may be carried in the cooling airflow.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to further modify the system of Sung to include a removable cover for the ice container in order to keep contaminants out of the ice making it safe for consumption.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAKIYA ROGERS whose telephone number is (571)270-7145. The examiner can normally be reached on T or Th: 8am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571)272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3744

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lakiya Rogers/
Examiner, Art Unit 3744

/CHERYL J. TYLER/
Supervisory Patent Examiner, Art Unit
3744